

2/9/98 (Item 9 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
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01246462 SUPPLIER NUMBER: 06958083 (THIS IS THE FULL TEXT)

**Don't run out. (using 1-2-3 2-2.01 to create a data-entry and  
order-processing system)**

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Lotus, v4, n9, p78(5)

Sept, 1988

ISSN: 8756-7334

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 2119 LINE COUNT: 00155

ABSTRACT: Users who want to keep efficient supply inventory records can set up a data-entry and order-processing system using Lotus 1-2-3 2-2.01. A company that keeps a database of its office-supplies inventory can use macros to keep track of incoming and outgoing supplies, can make the appropriate charges to individual departments, and can even have order slips printed automatically if the quantity of an item falls below a certain level. Step-by-step instructions for building the program are given.

TEXT:

Don't Run Out

Most businesses have storage areas for the supplies they need for their daily operations. Whether these supplies consist of paper clips and pencils, air filters and fan belts, or circuit boards and solder, it's important to keep track of the quantity on hand so that you can reorder an item when it reaches a low-inventory level. Using 1-2-3 Release 2/2.01, you can create a data-entry and order-processing system to streamline this task.

Boxtop Publishers Inc. keeps a database of its office-supplies inventory. At Boxtop, employees from different departments come to a supplies area and check out everything from floppy disks to pens and pencils. Before taking an item, an employee must enter the item number, the quantity taken, and the employee's last name and department number into a worksheet. A macro copies these four pieces of information into a log area of the worksheet so that the cost of the supplies can be charged to the correct department. Then the macro updates the quantity-on-hand value in the inventory database. If the quantity for a given item falls below a preset minimum, the macro prints an order slip for that item. This spreadsheet spares Boxtop's supply clerk from the tedious task of counting the items on the supply shelves and filling in order forms by hand.

Figure 1 shows the input area of the worksheet. When you select Checkout from the macro-generated menu, the macro puts the cell pointer in cell A5, where you enter an item number. Then press the RightArrow key, enter the quantity of the item you wish to take, and so on. When you've entered all the information, press Return. The item description appears in cell A15, and a prompt appears in the control panel, asking you if the description is correct. Respond by pressing Y or N and then Return. The macro makes the appropriate changes to the worksheet and, if necessary, prints an order slip for the item. When the updating is finished, the original menu appears. You may select Checkout again, select Print List to send a list of item numbers and their descriptions to the printer, or select Quit to end the macro and return to Ready mode.

Figures 2 and 3 show the inventory database and vendor database, respectively. In figure 2, note that the information listed for each inventory item includes a number that identifies the vendor. In the vendor database, you can find the name that corresponds to that number. Listing the vendors by number eliminates the time-consuming and memory-consuming process of repeatedly entering the names and addresses of vendors from whom

you buy more than one item. Formulas in the order-form section of the worksheet return the appropriate name and address by looking up an item's vendor number from the vendor database.

Figure 4 shows the macro program for the worksheet. Cell U1 contains the macro that starts automatically when you retrieve the spreadsheet; its sole purpose is to invoke the main menu. The menu macro starts in cell U3. The Checkout option of this menu contains a [BRANCH] command that invokes the checkout macro, which starts in cell U9.

Figure 5 shows the order-form range. The checkout macro prints this range when the quantity of an item falls below a preset minimum level.

#### BUILDING THE WORKSHEET

Start with a new worksheet set for manual calculations: Press slash and select Worksheet Global Recalculation Manual. Then set individual column widths by positioning the cell pointer in the appropriate column, selecting/Worksheet Column Set-Width, and entering the widths indicated: A-13 H-14 L-8 Q-15 B-10 I-12 M-10 R-23 C-11 J-8 N-5 U-11 D-13 K-11 P-21 V-13

Enter the labels and values shown in figures 1, 2, and 3, then enter the rows of dashed lines. To create the dashed lines, enter a backslash and an equal sign (\=) in the first cell of the row, and use the Copy command to copy it across the row as necessary. Center the labels in ranges A4..D4 and A21..D23: Select/Range Label Center and specify the appropriate range. Right-align the label in cell G1: With the cell pointer on that cell, select /Range Label Right and press Return. To make range A5..D5 unprotected, select /Range Unprotect and specify range A5..D5. Assign the comma format to cell B5: Select /Range Format, type a comma, enter 0, and specify cell B5.

Enter the labels shown in figure 4. Note that in this figure, the columns are widened so that you can read the labels. Some of the labels will be overlapped on your screen. Some of the labels in column U begin with a slash; you must type an apostrophe before entering these labels.

Enter the label Boxtop Publishers Inc \*\* Order Form \*\* in cell V46 as shown in Figure 5. Then enter the labels and rows of equal signs. Assign a date format to cell V48: Select /Range Format Date 1 and specify cell V48.

Next, create some named ranges. Use the labels in column T to assign names to cells in column U: Select /Range Name Labels Right and specify range T1..T31. Then assign the ranges that are shown in the Setup Table. Select /Range Name Create, enter the range name, and specify the appropriate cell or range.

Finally, enter the formulas shown in the Setup Table and save the worksheet. Note that the @VLOOKUP formulas initially return column headings from the inventory and vendor databases.

#### A SAMPLE SESSION

Make sure your printer is turned on, then retrieve the worksheet. Because you assigned the name \0 to cell U1, the macro starts automatically when you retrieve the worksheet. You can also start the macro yourself by holding down the MACRO key (the Alt key on most computers) and pressing I.

Suppose you wish to take four number 2 pencils out of inventory. Select Checkout from the menu. The cell pointer moves to cell A5. Type 7888 and press the RightArrow key. Type 4 and press RightArrow. Type your last name and press RightArrow, then type a few characters to stand for a department number and press Return. If you made any mistakes, press the LeftArrow key to reposition the cell pointer and then enter the correct value in the appropriate cell. If all four entries are correct, press Return an extra time to end the input process. If the item number you entered exists in the database and the quantity you entered doesn't exceed the on-hand amount for the item, the label Pencil, \$2 will appear in cell A15 and the prompt Is the description OK? <Y or N> will appear in the control panel. Press Y and then press Return. The macro takes over at this point, placing your entries into the log section for future reference and subtracting the quantity you entered from the current inventory of number 2

pencils. You previously had 24 pencils; you now have 20. Since 20 is the minimum quantity allowed, the macro calculates the worksheet and prints an order slip that includes the vendor's name and address, today's date, and the item number and description.

When the macro has finished processing, it brings the main menu back to the screen. Select Checkout again, enter 1234 in cell A5, enter 10 in cell B5, enter a last name and a department number in cells C5 and D5, respectively, and press Return an extra time. Press Y in response to the prompt Is the description OK? <Y or N> and press Return. The macro prints an order for 11 two-inch binders. When the main menu returns, select Quit. Press the GOTO key and enter G1. Notice that the quantity on hand for binders (cell I2) is now - 6. You previously had 4 on hand. By checking out 10 binders, you indicated that you would take 4 now and get the other 6 when they come in. The macro prints an order for 11 pieces because the formula in the cell named required returns either the minimum-reorder quantity or the number needed to bring inventory up to the minimum-reorder quantity, whichever amount is greater. You will need an external system to record the names of people who are awaiting back-ordered items.

Press MACRO-I to bring back the main menu. Select Print List. The program prints a list of every item number and description in the inventory database, which you can post for easy reference. When the printing is finished, the menu returns again.

Suppose that a shipment of 11 two-inch binders has just arrived. Before putting the shipment into the supply room, you must update the database's inventory (Qty on Hand) for binders. Select Checkout from the menu, enter 1234 in cell A5, and enter - 11 in cell B5. Skip and Last Name and Dept Number fields by pressing Return an extra time, and press Y and then Return to respond to the prompt Is the description OK?<Y or N>. The macro adds this transaction to the log and changes the on-hand value for binders in the database from - 6 to 5. This is consistent with taking six binders from the shipment and putting the remaining five in the supply room.

The final menu selection is Quit, which ends the macro and returns the worksheet to Ready mode so that you can perform necessary tasks that are not controlled by the macro. For example, you should save the worksheet on a regular basis so that it contains up-to-date information.

To add a new item to the inventory database, first enlarge the range named database: Select/Range Name Create, enter database, press the DownArrow key once, and press Return. Then enter the data for the new item after the last existing item.

The inventory database must be in ascending order by item number. If you need to re-sort the database after adding an item, select /Data Sort Data-Range, specify range G2..M12, select Primary-Key, specify cell G2, press A for ascending order, then select Go.

You **add new vendors** to the inventory **database** in a similar manner: Select/RANGE Name Create, enter vendlist, press the DownArrow key once, and press Return. Then enter a **new vendor** number and the vendor's name and address in range O8..R8. Make sure the vendor numbers stay in ascending order so that the @VLOOKUP formulas in the order-form range will work properly.

Deleting an inventory item that you no longer stock is even easier. For example, to remove paper clips from the database, enter 3445 in cell A5, select/Data Query Input, verify that range G1..M12 is the Input range, select Criterion, verify that A4..A5 is the Criterion range, then select Delete Delete Quit. The entire row of data for paper clips is deleted, and the database range contracts by one row.

You might wish to make simpler changes, such as changing the preferred vendor for a given item or a minimum reorder quantity. To make these changes, just enter a new value over the old one.

Before you start to use this system, you should arrange to have no supplies on order. If you can't do this, add the incoming quantities to the

on-hand values in the database, and when the new supplies come in, add them to the physical inventory without entering them in the worksheet. If you enter incoming supplies for which the macro didn't create order slips, the worksheet will indicate negative on-order values.

If you're planning to automate your inventory checkout system, this worksheet may fill the bill. To customize it, enter your own information, adjust the ranges named database and vendlist, and replace the label in cell V46 with your company's name.

As for the data that you'll accumulate in the log section (columns A through D, beginning in row 21), you should discover many practical applications, such as charging checked-out items to the correct department, producing trend charts of historical usage rates, or making bar graphs to identify the items that are in high demand.

CAPTIONS: Data-entry set-up instructions. (program)

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